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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,708	12/08/2000	Josh N. Hogan	JH 20004	1725

7590 06/20/2003  
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EXAMINER

TRAN, MINH LOAN

ART UNIT PAPER NUMBER

2826

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/733,708

Applicant(s)

HOGAN, JOSH N.

Examiner

Minhloan T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-94 is/are pending in the application.
- 4a) Of the above claim(s) 2-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 32-94 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of the species of Figure 12 on which claims 32-94 are readable in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Information Disclosure Statement***

2. The information disclosure statement filed 03/28/2003 has been considered.

### ***Oath/Declaration***

3. The oath or declaration filed on 12/08/2000 is acceptable.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the reflective element 102, the fiber based resonant cavity (labeled A), pump laser cavity (labeled B) as described in the specification page 6, lines 4-7; the output coupler 1008 as described in the specification page 11, line 22. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the pump cavity (in figure 12), the **seeding elements operable in the optically processing element** to initiate generation of at least some of the discrete wavelengths (in figure 12) as recited in claims 1, 47, 94; the **other** reflective elements as recited in claim 55 and a feedback circuitry, a control mechanism (i.e. temperature control) and a stable reference as recited in claims 61 and 62 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Note that applicant elects the species of **figure 12** on which claims 32-94 are readable.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### **Specification**

6. The disclosure is objected to because of the following informalities:

On page 7, line 12, "the pump resonant cavity **105**" is not correct because the reference 105 is a reflector.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

7. Claims 1, 32-94 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, line 7, "reflective elements" is unclear as to whether it is being referred to the reflective elements that are coupled to the optical processing medium;

line 11, "seeding the optical processing medium with at least some of the discrete wavelengths" is unclear as to whether it is being referred to the coupling of the additional seeding lasers 1006 and 1007 to the optical processing medium (note that applicant elects figure 12 which does not show the additional seeding lasers 1006 and 1007;)

line 11, "the discrete wavelengths" is unclear as to what is the element that produces the discrete wavelengths ?

In claim 32, "reflective elements" is unclear as to whether it is being referred to the reflective elements that are coupled to the optical processing medium.

In claims 36 and 37, line 2, "the generated set" lacks of antecedent basis.

In claim 38, line 2, "the **non-linear** medium" lacks of antecedent basis.

In claim 41, what does applicant means by "the seed wavelengths generate **additional wavelengths** of the multiplicity discrete wavelengths ?

In claim 47, lines 4-6, what does applicant mean by "said optical processing element optically coupled to the optical processing element operable in a multiple pass resonant manner" ?

line 5, "the optical processing element operable in a multiple pass resonant manner" lacks of antecedent basis;

lines 8 and 9, "seeding elements operable in the optical processing element" is unclear as to whether it is being referred to the additional seeding lasers 1006 and 1007 in the pump cavity;

line 8, "seeding elements **operable in the optically processing element**" is unclear as to how the seeding elements can operate **in** the optically processing element ?

lines 11 and 12, "(why can this not be called a pulsed laser source ??)" should be deleted for clarity.

In claim 55, lines 1 and 2, "**other** reflective elements" lacks of antecedent basis.

In claim 58, line 2, "the set of wavelengths" lacks of antecedent basis;

line 2, "the desired frequency separation of the set of wavelengths" lacks of antecedent basis.

In claim 60, line 2, "the signal" lacks of antecedent basis.

In claim 61, lines 1-3, what does applicant mean by "the repetition rate of the repetitive pulsed radiation is maintained at fixed value by means of feedback circuitry, a control mechanism and a stable reference" ?

In claims 82 and 83, line 2 "the generated set" lacks of antecedent basis.

In claim 88, line 1, what does applicant mean by "the seeding wavelengths are seeding elements" ?

In claim 94, lines 11 and 12, "means for seeding the optical processing medium" is unclear as to whether it is being referred to the additional seeding lasers 1006 and 1007 in the pump cavity.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 32-57, 60-94 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanders et al. (5,912,910).

With regard to claims 1, 36-39, 41-57, 60-78, 82-86, 88-94, Sanders et al. discloses an apparatus for generating pulsed radiation comprising a non-linear crystal material optical processing element 35 that is coupled to the reflectors 36A, 36B so that it capable of operating in a multiple pass resonant manner; seeding elements operable in the optical processing element 35 for generating at least some of the discrete wavelengths  $\lambda_2$ ; an optically active element 33 is operable to generate repetitive pulsed pump radiation  $\lambda_1$  in a pump cavity with the reflective elements 33C; wherein the optically active element 33 coupled to the optical processing element 35 and operable to transmit such repetitive pump radiation  $\lambda_1$  to the optically active element 35, such that the repetitive pulsed radiation with a multiplicity of discrete wavelengths is generated at 37. Note figures 1D, 8, 12, 13, 19, 20, 22 and 23 of Sanders et al.

With regard to claim 32, figure 1D and 8 of Sanders et al. show and the resonant cavity and the pump cavity are coupled by being co-located as a single resonant cavity which is comprised of the laser source 33, the optical processing element 35 and reflective elements 36A, 36B, 33C.

With regard to claims 33 and 79, figure 1D and 8 of Sanders et al. show at least one reflective element is a Distributed Bragg Reflector 33C that is formed at a facet of the laser source 33.

With regard to claims 34 and 80, figure 1D and 8 of Sanders et al. show at least one reflective element 36B is an end of the optical processing element 35.

With regard to claims 35 and 81, figures 13 and 23 of Sanders et al. show the reflective elements are distributed Bragg grating 69G.

With regard to claims 40 and 87, figures 13 and 23 of Sanders et al. show two low power continuous wave laser diode sources 66B and 62 are coupled to the resonant cavity that comprises the optical processing element 69B.

### ***Allowable Subject Matter***

9. Claim 59 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minhloan T. Tran whose telephone number is (703) 308-4919. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone




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numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mlt  
06/2003

  
Minhloan T. Tran  
Primary Examiner  
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